



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,027	11/02/2000	Hideshi Hattori	TJK/134	6830

26689 7590 08/30/2002

WILDMAN, HARROLD, ALLEN & DIXON  
225 WEST WACKER DRIVE  
CHICAGO, IL 60606

EXAMINER

BLANTON, REBECCA A

ART UNIT	PAPER NUMBER
----------	--------------

1762

6

DATE MAILED: 08/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/705,027

Applicant(s)

HATTORI, HIDESHI

Examiner

Rebecca A. Blanton

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 21 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1762

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-13, and 21-22, drawn to a method for producing a polymer-particle composite, classified in class 427, subclass 207.1.
- II. Claims 14-20, drawn to a polymer-particle composite, classified in class 428, subclass 304.4.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the polymer-particle composite can be formed by heating the polymer above its melting point and mixing the polymer and particles together.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Timothy Keefer on 07/22/2002 a provisional election was made WITH traverse to prosecute the invention of Group 1, claims 1-13, and 21-22. Affirmation of this election must be made by applicant in

Art Unit: 1762

replying to this Office action. Claims 14-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Adair et al. (U.S. 5,504,877).

Regarding claims 1, 2, and 5, Adair et al. disclose a process for forming a pattern film on the surface of a substrate by first coating the surface with a polymer material followed by exposing the polymer coating to an aqueous colloid of particles that swell and disperse throughout the polymeric coating (abstract). Adair et al. teach that the substrate is first coated with a polymer, preferably polyethyleneimine, and is then immersed in an aqueous dispersion of diamond particles that adhere to the polymer coating as it swells (column 4 lines 5-34).

Regarding claim 3, Adair et al. teach that the polymer coating is applied to the substrate using a mask, so as to form a pattern on the substrate surface (column 2 lines 11-16).

Referring to claim 4, in column 3 lines 25-27, the reference teaches that the substrate may be made of metal, plastic, ceramic, or glass.

Art Unit: 1762

Regarding claims 6-8, Adair et al. teach that the polymer coating is formed of a polyelectrolyte that carries a positive charge, which is opposite of the negatively charged diamond particles (column 4 lines 1-12). The polyelectrolyte, disclosed by the reference, is polyethyleneimine, which is known to be a water-soluble polymer (column 4 lines 5-9).

Referring to claims 9 and 11, the reference teaches in column 4 lines 21-26 that the particles are diamond particles with a diameter of 0.1-10  $\mu\text{m}$ , wherein the particles make up 0.05-5 % volume of the particulate dispersion.

Regarding claims 12-13, Adair et al. teach that the solvent used for the particulate dispersion is water, which has a dielectric constant greater than 4 (column 4 lines 21-29).

Claims 1-2, 4, 10, 12-13, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Gould (U.S. 4,061,827).

Regarding claims 1, 2, and 4, Gould discloses a process for forming an electrically conducting fiber formed of an organic polymer through which particles have been dispersed (abstract). In column 3 lines 41-63, Gould discloses an example of a fabric with a polyethylene terephthalate-adipate copolymer coating that is immersed in aqueous slurry of particles and dispersing agent, so as to attach the particles to the polymer coating.

Referring to claim 10, the reference teaches in column 3 lines 49-50 that the particles that are coated onto the polymer layer are electrically conductive carbon particles.

Art Unit: 1762

Referring to claims 12-13, Gould teaches that the particles are dispersed in water, which has a dielectric constant greater than 4, mixed with a dispersing agent (column 3 lines 49-50).

Regarding claim 21, the reference teaches that the particles are dispersed throughout the polymer coating by contacting the coating with an aqueous slurry of the particles, followed by drying the coating and then treating the coated fiber with wetting agents prior to washing it with water (column 1 lines 28-37 and column 2 lines 39-43). Gould further teaches that the coated fiber is then subjected to a heat treatment so as to modify the carbon particles to modify the temperature coefficient of the fiber (column 2 lines 60-68 and column 3 lines 1-11).

***Allowable Subject Matter***

Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The applicant's limitation of forming a polymer-particle composite by coating a substrate with a polymer which is then immersed in a particulate dispersion followed by coating the substrate with a metal by electrolytic plating or electroless plating distinguishes over Gould because the reference merely teaches forming a polymer-particle composite which is then treated with a wetting agent.

None of the prior art of record teaches or makes obvious the applicant's claimed invention of forming a polymer-particle composite by coating a substrate with a polymer

Art Unit: 1762


which is then immersed in a particulate dispersion followed by coating the substrate with a metal by electrolytic plating or electroless plating.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca A. Blanton whose telephone number is 703-605-4295. The examiner can normally be reached on M - F (7:30am - 3:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

rab   
August 27, 2002

  
**MICHAEL BARR**  
**PRIMARY EXAMINER**